

[Sequence Listing]

<110> Chugai Seiyaku Kabushiki Kaisha  
<120> Humanized anti-CD47 antibody  
<130> YCT-971  
<160> 92

<210> 1  
<211> 133  
<212> DNA  
<213> Artificial Sequence

<220>  
<400> 1.  
cccaagcctc caccatggaa tggagcigga tattttttttt cciccttgica ggaactgcag 60  
gtgtccactc ccagggtgcag cttgtgcagt ctggggciga ggtaagaagaag cctggggcct 120  
cagttaaaggta ttcc 133

<210> 2  
<211> 133  
<212> DNA  
<213> Artificial Sequence

<220>  
<400> 2  
ggcgttagtg gaigggat atttatccctt acaatgtatgg tacaatgtat aatgagaatg 60  
tcaaggacat agtcacgtatg accccgggaca cgtccacgtatg cacagtcacat aatggatgtatg 120  
gcagtcctcag atc 133

<210> 3  
<211> 133  
<212> DNA  
<213> Artificial Sequence

<210> Rattus norvegicus  
<220>  
<400> 3  
tgtaaggata aataataatccc aitccactcaa gcccttgtcc agggggccigti cgcacccagl 60  
gaataacaatcg gtgggcgaag gtttatccag atgccttataa ggaaacccttc acigaggccc 120  
caggccttctt cac 133

<210> 4  
<211> 133  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 4  
cgcgatcca cicaccigag gagacggtga ccagggttcc tggcccccag tcgtcgtaag 60  
tatagtaacc ccctctagca caataataga cggccgtgtc cicagatcig agactgctca 120  
actccatgt a gac 133

<210> 5  
<211> 23  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 5  
cccaagcttc caccatggaa tgg 23

<210> 6  
<211> 23  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 6  
cgcgatcca cicaccigag gag 23

<210> 7  
<211> 424  
<212> DNA  
<213> Mouse, Human  
<400> 7  
atg gaa tgg agc tgg ata ttt ctc ttc ctc ctg tca gga act gca ggt 48  
Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly  
gtc cac tcc cag gag ctt ctg gtt ctt ggg gct gag gtt aag aag 96  
Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1	1	5	10
cct ggg gcc tca gtg aag gtt tcc tgt aag gca tct gga tac acc ttc 144			
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe			
15	20	25	
gcc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt 192			
Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu			
30	35	40	45
gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240			
Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn			
50	55	60	
gag aag ttc aag gac aga gtc acg atg acc cgg gac acg tcc acg agc 288			
Glu Lys Phe Lys Asp Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser			
65	70	75	
aca gtc tac atg gag ttg agc agt ctc aga tct gag gac acg gcc gtc 336			
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val			
80	85	90	
tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384			
Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln			
95	100	105	
gga acc ctg gtc acc gtc tcc tca ggt gag tgg atc cgc g 424			
Gly Thr Leu Val Thr Val Ser Ser			
110	115		

<210> 8

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<400> 8

gacagagica cgtgaccic agacacgtcc acgagcacag 40

<210> 9

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

&lt;400&gt; 9

ggtcatcgta acicgtc 18

&lt;210&gt; 10

&lt;211&gt; 424

&lt;212&gt; DNA

&lt;213&gt; Mouse, Human

&lt;400&gt; 10

atg gaa tgg agc tgg ata ttt ctc ttc ctc ctt tca gga act gca ggt 48  
Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Glygtc cac tcc cag gtg cag ctt gtg cag tct ggg gct gag gtg aag aag 96  
Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgt aag gca tct gga tac acc ttc 144  
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

gcc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt 192  
Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc acg acg 288  
Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser

65 70 75

aca gtc tac atg gag ttt agc agt ctc aga tct gag gac acg gcc gtc 336  
Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val

80 85 90

tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln

95 100 105

gga acc ctt gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
Gly Thr Leu Val Thr Val Ser Ser

110 115

<210> 11  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 11  
 gcatctggat acacc tac caaccatgtt attcacatggg 40

<210> 12  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 12  
 gaaggatgtat ccagatgc 18

<210> 13  
 <211> 424  
 <212> DNA  
 <213> Mouse, Human  
 <400> 13  
 atg gaa tgg agc tgg ata ttt ctc ttc ctc ctg tca gga act gca ggt 48  
 Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gig cag ctg gtg cag tct ggg gct gag gtg aag aag 96  
 Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

acc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt 192  
 Thr Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc acg agc 288  
 Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser

65 70 75

aca gtc tac atg gag ttg agc agt ctc aga tct gag gac acg gcc gtc 336  
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val

80 85 90

tat tat tgt gct aga ggg ggt tac tat act tac gac 'gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln

95 100 105

gga acc ctg gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
 Gly Thr Leu Val Thr Val Ser Ser

110 115

<210> 14

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<400> 14

aatgagaagt tcaaggacaa agtcacgatg acctcagac 39

<210> 15

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<400> 15

gtccttgaac ttctcatt 18

<210> 16

<211> 424

<212> DNA

<213> Mouse, Human

<400> 16

atg gaa tgg agc tgg ata ttt ctc ttc ctc tca gga act gca ggt 48  
 Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gtc cag ctc gtc cag tct ggg gct gag gtc aag aag 96  
 Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 -1 1 5 10  
 cct ggg gcc tca gtc aag gtt tcc tgc aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 15 20 25  
 gcc aac cat gtt att cac tgg gtc cga cag gcc cct gga caa ggg ctt 192  
 Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu  
 30 35 40 45  
 gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn  
 50 55 60  
 gag aag ttc aag gac aaa gtc acg atg acc tca gac acg tcc acg agc 288  
 Glu Lys Phe Lys Asp Lys Val Thr Met Thr Ser Asp Thr Ser Thr Ser  
 65 70 75  
 aca gtc tac atg gag tgg agc agt ctc aga tct gag gac acg gcc gtc 336  
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
 80 85 90  
 tat tat tgc gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln  
 95 100 105  
 gga acc ctc gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
 Gly Thr Leu Val Thr Val Ser Ser  
 110 115

<210> 17

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<400> 17

ticaaggaca gagtcacgct gacccatcagac acgtccacg 39

<210> 18

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<400> 18

cgtgacitg tcctigaa 18

<210> 19

<211> 424

<212> DNA

<213> Mouse, Human

<400> 19

atg gaa tgg agc tgg ata ttt ctc ttc ctc ctg tca gga act gca ggt 48  
 Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96  
 Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg aag gtt tcc tct aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

gcc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt 192  
 Ala Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag gac aga gtc acg ctg acc tca gac acg tcc acg agc 288  
 Glu Lys Phe Lys Asp Arg Val Thr Leu Thr Ser Asp Thr Ser Thr Ser

65 70 75

aca gtc tac atg gag ttg agc agt ctc aga tct gag gac acg gcc gtc 336  
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val

80 85 90

tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln

95 100 105

gga acc ctg gtc acc gtc tcc tca ggt gag tgg atc cgc g 424

Gly Thr Leu Val Thr Val Ser Ser

110

115

<210> 20

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<400> 20

gagcagtcgc agatctgacg acacggccgt ctatatttgg 39

<210> 21

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<400> 21

cgtcagatct gagacatgcgc 20

<210> 22

<211> 424

<212> DNA

<213> Mouse, Human

<400> 22

atg gaa tgg agc tgg aia ttt ctc ttc ctc ctg tca gga act gca ggt 48

Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96

Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1

5

10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15

20

25

acc aac cat gtt att cac tgg gtg cga cag gcc cct gga caa ggg ctt 192

Thr Asn His Val Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu

30

35

40

45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn  
 50 55 60  
 gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc acg agc 288  
 Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Thr Ser  
 65 70 75  
 aca gtc tac atg gag ttg agc agt ctc aga tct gac gac acg gcc gtc 336  
 Thr Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val  
 80 85 90  
 tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln  
 95 100 105  
 gga acc ctg gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
 Gly Thr Leu Val Thr Val Ser Ser  
 110 115

<210> 23  
<211> 35  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 23  
gaagccctgggg cctcagtgccag gttttccctgtttaagg 35

<210> 24  
<211> 39  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 24  
aaccatgtta ttacatggct gcgcacaggcc cctggacaa 39

<210> 25  
<211> 43  
<212> DNA

<213> Artificial Sequence

<220>

<400> 25

gatgacccca gacacgicca tcagcacagc ctacatggag ttg 43

<210> 26

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<400> 26

cacigaggcc ccaggcic 19

<210> 27

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<400> 27

ccagigaata acatggtt 18

<210> 28

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<400> 28

cgcggatcca ctacacgtag gagacggta ccagggttc ttggccca 49

<210> 29

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<400> 29

ggacgigctt gaggcatacg 20

&lt;210&gt; 30

&lt;211&gt; 424

&lt;212&gt; DNA

&lt;213&gt; Mouse, Human

&lt;400&gt; 30

atg gaa tgg agc tgg ata ttt ctc ttc ctc ctc tca gga act gca ggt 48  
 Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gtg cag ctc ctc ctc ctc tca ggg gct gag gtg aag aag 96  
 Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg cag gtt tcc tct aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

acc aac cat gtt att cac tgg ctg cga cag gcc cct gga caa ggg ctt 192  
 Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc atc acg 288  
 Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser

65 70 75

aca gcc tac atg gag ttg agc agt ctc aga tct gac gac acg gcc gtc 336  
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val

80 85 90

tat tat tct gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln

95 100 105

gca acc ctc gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
 Ala Thr Leu Val Thr Val Ser Ser

110 115

&lt;210&gt; 31

&lt;211&gt; 130

<212> DNA

<213> Artificial Sequence

<220>

<400> 31

cccaagctc caccatgagg ctccctgc tc agtcctggg gctgcatacg ctctgggtcc 60  
caggcicccag tggggatgtt gatgcactc agtcctccact ctccctgccc gtcacccttg 120  
gacagccggc 130

<210> 32

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<400> 130

cagcagaggc caggccaaatc tccaaggcgc ctaattata aagttccaa ccgatttct 60  
ggtgtccccag acagattcag cggcagttggg tcaggcactg attcacact gaaaatcagc 120  
agggtggagg 130

<210> 33

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<400> 33

ggcgcccttgg agatggcct ggcctcgct gaaaccaatg taaataggtc ttccattac 60  
tggtgcacaag gctcigactt gatctgcagg agatggaggc cggctgtccca agggigacgg 120  
gcagggagag 130

<210> 34

<211> 130

<212> DNA

<213> Artificial Sequence

<220>

<400> 34

cgcggatcca ctacgtttt atccctcaggct tggccccctg gccaaacgtg ttcggaaat 60  
gtgtacattt agagcagtaa taaactccaa catccctcaggc ctccaccctg ctgttttca 120

gigigaaaatc 130

<210> 35

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<400> 23

ccaaagcttc caccatgagg ctc 23

<210> 36

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<400> 23

cgcggatcca ctcacgtttt atc 23

<210> 37

<211> 412

<212>

<213>

<400> 37

atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctt ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro

-1 1 5 10

gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser

15 20 25

ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt cag cag agg 192  
 Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg

30 35 40

cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt 240

Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe  
 45 50 55 60  
 tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe  
 65 70 75  
 aca ctg aaa atc agc agg gtt gag gat gtt gga gtt tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
 80 85 90  
 tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys  
 95 100 105  
 ctg gag atc aaa cgt gag tgg atc cgc g 412  
 Leu Glu Ile Lys  
 110

<210> 38  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 38  
 ccaggccaat ctcctaggct ccttaattttt aaagttttcc 39

<210> 39  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 39  
 ccttggagat tggcttgg 18

<210> 40  
 <211> 412  
 <212> DNA  
 <213> Mouse, Human  
 <400> 40

atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro

-1 1 5 10

gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser

15 20 25

ctt gtg cac agt aat gga aag acc tat ita cat tgg ttt cag cag agg 192  
 Leu Val His Ser Asn Gly Thr Tyr Leu His Trp Phe Gln Gln Arg

30 35 40

cca ggc caa tct cca agg ctc cta att tat aaa gtt tcc aac cga ttt 240  
 Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe

45 50 55 60

tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe

65 70 75

aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr

80 85 90

tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys

95 100 105

ctg gag atc aaa cgt gag tgg atc cgc g 412

Leu Glu Ile Lys

110

<210> 41

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<400> 41

gaggatgtg gagtttattt ctgcctcaa agtacacat 39

<210> 42  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 42  
 ataaaactccca acatccctc . 18

<210> 43  
 <211> 412  
 <212> DNA  
 <213> Mouse, Human  
 <400> 43  
 atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro  
  
 ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro  
 -1 1 5 10  
 gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 15 20 25  
 ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt cag cag agg 192  
 Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Gln Gln Arg  
 30 35 40  
 cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga itt 240  
 Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe  
 45 50 55 60  
 tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe  
 65 70 75  
 aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat ttc 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Phe  
 80 85 90  
 tgc tct caa agt aca cat gtt ccg tac acg itt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys

95	100	105
----	-----	-----

ctg gag atc aaa cgt gag tgg atc cgc g 412  
 Leu Glu Ile Lys

110		
-----	--	--

<210> 44  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 44  
 aagacctatt tacatggia ccagcagagg ccaggccaa 39

<210> 45  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 45  
 ccaatgtaaa taggtctttc 20

<210> 46  
 <211> 412  
 <212> DNA  
 <213> Mouse, Human  
 <400> 46  
 atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro

-1	1	5	10
----	---	---	----

gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser

15	20	25
----	----	----

ctt gtg cac agt aat gga aag acc tat tta cat tgg tac cag cag agg 192

Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Gln Gln Arg  
 30 35 40  
 cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt 240  
 Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe  
 45 50 55 60  
 tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe  
 65 70 75  
 aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
 80 85 90  
 tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys  
 95 100 105  
 ctg gag atc aaa cgt gag tgg atc cgc g 412  
 Leu Glu Ile Lys  
 110

<210> 47  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 47  
 cctatattac atggtttctg cagaggccag gccaaatctc 39

<210> 48  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 48  
 gaaaccaatg taaaaggic 20

<210> 49  
 <211> 412

&lt;212&gt; DNA

&lt;213&gt; Mouse, Human

&lt;400&gt; 49

atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro

      -1    1               5               10

gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser

      15               20               25

ctt gtg cac agt aat gga aag acc tat tta cat tgg ttt ctc cag agg 192  
 Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Phe Leu Gln Arg

      30               35               40

cca ggc caa tct cca agg cgc cta att tat aaa gtt tcc aac cga ttt 240  
 Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe

      45               50               55               60

tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe

      65               70               75

aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr

      80               85               90

tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys

      95               100               105

ctg gag atc aaa cgt gag tgg atc cgc g 412

Leu Glu Ile Lys

110

&lt;210&gt; 50

&lt;211&gt; 40

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<400> 50

cagaagccag gccagtc tcc aagaccccg atctacaaag 40

<210> 51

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<400> 51

ggagactggcc tggcttcg cagataccaa tgiaatagg 40

<210> 52

<211> 412

<212> DNA

<213> Mouse, Human

<400> 52

atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat gtt gtg atg act cag tct cca ctc tcc ctg ccc 96  
 Gly Ser Ser Gly Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro

-1 1 5 10

gtc acc ctt gga cag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Leu Gly Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser

15 20 25

ctt gtg cac agt aat gga aag acc tat tta cat tgg tat ctg cag aag 192  
 Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu Gln Lys

30 35 40

cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac cga ttt 240  
 Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe

45 50 55 60

tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat itc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe

65 70 75

aca ctg aaa atc agc agg gtg gag gct gag gat gtt gga gtt tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr

80	85	90
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag	384	
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys		
95	100	105
cgt gag atc aaa cgt gag tgg atc cgc g	412	
Leu Glu Ile Lys		
110		

<210> 53  
 <211> 54  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 53  
 cagtcicccac tctccctgcc cgtcacccct ggagagccgg cctccatcic ctgc 54

<210> 54  
 <211> 39  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 5  
 gggtgaggc tgaatgttt ggaatttatt actgtcic 39

<210> 55  
 <211> 48  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <400> 55  
 cagggagagt ggagacgtgag tcatcacaata tccccactg gagccgtt 48

<210> 56  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

&lt;220&gt;

&lt;400&gt; 56

ccaacatcat cagcccccac cc 22

&lt;210&gt; 57

&lt;211&gt; 412

&lt;212&gt; DNA

&lt;213&gt; Mouse, Human

&lt;400&gt; 57

atg agg ctc cct gct cag ctc ctt ggg ctt cta atg ctc tgg gtc cca 48  
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctt ccc 96  
 Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro  
 -1 1 5 10

gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt cag agc 144  
 Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 15 20 25

ctt gtg cac agt aat gga aag acc tat tta cat tgg tat ctt cag aag 192  
 Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu Gln Lys  
 30 35 40

cca ggc cag tct cca aga ctc ctt atc tac aaa gtt tcc aac cga ttt 240  
 Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe  
 45 50 55 60

tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc 288  
 Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe  
 65 70 75

aca ctt aaa atc agc agg gtg gag gct gat gat gtt gga att tat tac 336  
 Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr  
 80 85 90

tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag 384  
 Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys  
 95 100 105

ctt gag atc aaa ctt gag tgg atc cgc g 412  
 Leu Glu Ile Lys

110

<210> 58  
<211> 38  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 58  
ccttacccaa ccatgttatac cactggctgc gacaggcc 38

<210> 59  
<211> 38  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 59  
ataatgagaa gttcaagggc agagttcacga tgacctca 38

<210> 60  
<211> 38  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 60  
tgcttagaggg ggttacttatt cttacgacga ctggggcc 38

<210> 61  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 61  
ataacaatggt tggtaaggta 20

<210> 62  
<211> 20  
<212> DNA

<213> Artificial Sequence

<220>

<400> 62

ccitgaactt cicattatac 20

<210> 63

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<400> 63

atagtaaacc cctcttagca 19

<210> 64

<211> 424

<212> DNA

<213> Mouse, Human

<400> 64

atg gaa tgg agc tgg ata ttt ctc ttc ctc ctg tca gga act gca ggt 48  
 Met Glu Trp Ser Trp Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly

gtc cac tcc cag gtc cag ctg gtg cag tct ggg gct gag gtc aag aag 96  
 Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

acc aac cat gtt atg cac tgg ctg cga cag gcc cct gga caa ggg ctt 192  
 Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag ggc aga gtc acg atg acc tca gac acg tcc atc acg 288  
 Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser

65 70 75

aca gcc tac atg gag tgg agc agt ctc aga tct gac gac acg gcc gtc 336  
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val  
                   80                  85                  90  
 tat tat tgt gct aga ggg ggt tac tat tct tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln  
                   95                  100                  105  
 gca acc ctg gtc acc gtc tcc tca ggt gag tgg atc cgc g 424  
 Ala Thr Leu Val Thr Val Ser Ser  
                   110                  115

<210> 65  
<211> 39  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 65  
acagtaaggg aaacacccat ttacagtggtt atcgtcaga 39

<210> 66  
<211> 39  
<212> DNA  
<213> Artificial Sequence  
<220>  
<400> 66  
ataggcggtt cccttacgt gcagaaggct cttttttttt 39

<210> 67  
<211> 412  
<212> DNA  
<213> Mouse, Human  
<400> 67  
atg agg ctc cct gct cag ctc ctg ggg ctg cta atg ctc tgg gtc cca 48  
Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Met Leu Trp Val Pro

ggc tcc agt ggg gat att gtg atg act cag tct cca ctc tcc ctt ccc 96  
Gly Ser Ser Gly Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro

-1	1	5	10
gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt cag agc	144		
Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser			
15	20	25	
ctt ctg cac agt aag gga aac acc tat tta cag tgg tat ctg cag aag	192		
Leu Leu His Ser Lys Gly Asn Thr Tyr Leu Gln Trp Tyr Leu Gln Lys			
30	35	40	
cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac cga ttt	240		
Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe			
45	50	55	60
tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act gat ttc	288		
Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe			
65	70	75	
aca ctg aaa atc agc agg gtg gag gct gat gat gtt gga att tat tac	336		
Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile Tyr Tyr			
80	85	90	
tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg acc aag	384		
Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly Thr Lys			
95	100	105	
ctg gag atc aaa cgt gag tgg atc cgc g	412		
Leu Glu Ile Lys			
110			

<210> 68

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<400> 68

agggtgtcgac tcccgaggcg agcgtg 24

<210> 69

<211> 35

<212> DNA

<213> Artificial Sequence

<220>



gtc gac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96  
 Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys  
 -1 1 5 10  
 cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 15 20 25  
 acc aac cat gtt att cac tgg ctg cga cag gcc cct gga caa ggg ctt 192  
 Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu  
 30 35 40 45  
 gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn  
 50 55 60  
 gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc atc agc 288  
 Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser  
 65 70 75  
 aca gcc tac atg gag ttg agc agt ctc aga tct gac gac acg gcc gtc 336  
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val  
 80 85 90  
 tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln  
 95 100 105  
 gca acc ctg gtc aca gtc tcg agt ggt ggc gga ggt tcc gat att gtg 432  
 Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val  
 110 115 120 125  
 atg act cag tct cca ctc tcc ctg ccc gtc acc cct gga gag ccg gcc 480  
 Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala  
 130 135 140  
 tcc atc tcc tgc aga tca agt cag agc ctt gtg cac agt aat gga aag 528  
 Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys  
 145 150 155  
 acc tat tta cat tgg tat ctg cag aag cca ggc cag tct cca aga ctc 576  
 Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu  
 160 165 170  
 ctg atc tac aaa gtt tcc aac cga ttt tct ggt gtc cca gac aga ttc 624  
 Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe  
 175 180 185

agc ggc agt ggg tca ggc act gat ttc aca ctg aaa atc agc agg gtg 672  
 Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val  
 190 195 200 205  
 gag gct gat gat gtt gga att tat tac tgc tct caa agt aca cat gtt 720  
 Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val  
 210 215 220  
 ccg tac acg ttt ggc cag ggg acc aag ctg gag atc aaa taa tga gcg 768  
 Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 225 230

<210> 74

<211> 768

<212> DNA

<213> Mouse, Human

<400> 74

atg gga tgg agc tgt atc atc ctc ttc tgg gta gca aca gct aca ggt 48  
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly

gtc gac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96  
 Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1 5 10

cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc 144  
 Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15 20 25

acc aac cat gtt atg cac tgg ctg cga cag gcc cct gga caa ggg ctt 192  
 Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu

30 35 40 45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240  
 Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50 55 60

gag aag ttc aag ggc aga gtc acg atg acc tca gac acg tcc atc agc 288  
 Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser

65 70 75

aca gcc tac atg gag ttt agc agt ctc aga tct gac gac acg gcc gtc 336  
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val

80 85 90

tat tat tgt gct aga ggg ggt tac tat tct tac gac gac tgg ggc caa 384  
 Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln  
 95 100 105  
 gca acc ctg gtc aca gtc tcg agt ggt ggc gga ggt tcc gat att gtg 432  
 Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val  
 110 115 120 125  
 atg act cag tct cca ctc tcc ctg ccc gtc acc cct gga gag ccg gcc 480  
 Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala  
 130 135 140  
 tcc atc tcc tgc aga tca agt cag agc ctt ctg cac agt aag gga aac 528  
 Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser Lys Gly Asn  
 145 150 155  
 acc tat tta cag tgg tat ctg cag aag cca ggc cag tct cca aga ctc 576  
 Thr Tyr Leu Gln Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu  
 160 165 170  
 ctg atc tac aaa gtt tcc aac cga ttt tct ggt gtc cca gac aga ttc 624  
 Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe  
 175 180 185  
 agc ggc agt ggg tca ggc act gat ttc aca ctg aaa atc agc agg gtg 672  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val  
 190 195 200 205  
 gag gct gat gat gtt gga att tat tac tgc tct caa agt aca cat gtt 720  
 Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val  
 210 215 220  
 ccg tac acg ttt ggc cag ggg acc aag ctg gag atc aaa taa tga gcg 768  
 Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 225 230

<210> 75

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<400> 75

cgcgatccg giggtggcgg atcgcaggcg cagcgtggcgc agtc 44

<210> 76

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<400> 76

cgcgatcca ccaccacccg aaccaccacc acctttgc tccagcttgg tccc 54

<210> 77

<211> 45

<212> DNA

<213>

<400> 77

ggt ggt ggt ggt tcg ggt ggt gga tcc ggt ggt ggc gga tcg 45

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser

1

5

10

15

<210> 78

<211> 1515

<212> DNA

<213> Mouse, Human

<400> 78

atg gga tgg agc tgt atc atc ctc ttc tgg gta gca aca gct aca ggt 48

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly

gtc gac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96

Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys

-1 1

5

10

cct ggg gcc tca gtg cag gtt tcc tgt aag gca tct gga tac acc ttc 144

Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe

15

20

25

acc aac cat gtt att cac tgg ctg cga cag gcc cct gga caa ggg ctt 192

Thr Asn His Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu

30

35

40

45

gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat 240

Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn

50	55	60
gag aag ttc aag gac aga gtc acg atg acc tca gac acg tcc atc agc 288		
Glu Lys Phe Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser		
65	70	75
aca gcc tac atg gag ttt agc agt ctc aga tct gac gac acg gcc gtc 336		
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val		
80	85	90
tat tat tgt gct aga ggg ggt tac tat act tac gac gac tgg ggc caa 384		
Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln		
95	100	105
gca acc ctg gtc aca gtc tcg agt ggt ggc gga ggt tcc gat att gtg 432		
Ala Thr Leu Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val		
110	115	120
atg act cag tct cca ctc tcc ctg ccc gtc acc cct gga gag ccg gcc 480		
Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala		
130	135	140
tcc atc tcc tgc aga tca agt cag agc ctt gtg cac agt aat gga aag 528		
Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys		
145	150	155
acc tat tta cat' tgg tat ctg cag aag cca ggc cag tct cca aga ctc 576		
Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu		
160	165	170
ctg atc tac aaa gtt tcc aac cga ttt tct ggt gtc cca gac aga ttc 624		
Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe		
175	180	185
agc ggc agt ggg tca ggc act gat ttc aca ctg aaa atc agc agg gtg 672		
Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val		
190	195	200
gag gct gat gat gtt gga att tat tac tgc tct caa agt aca cat gtt 720		
Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val		
210	215	220
ccg tac acg ttt ggc cag ggg acc aag ctg gag atc aaa ggt ggt ggt 768		
Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly		
225	230	235
ggt tcg ggt ggt ggt gga tcc ggt ggc gga tcg cag gtg cag ctg 816		
Gly Ser Gly Gly Ser Gly Gly Ser Gly Ser Gln Val Gln Leu		

240	245	250
gtg cag tct ggg gct gag gtg aag aag cct ggg gcc tca gtg cag gtt 864		
Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Gln Val		
255	260	265
tcc tgc aag gca tct gga tac acc ttc acc aac cat gtt att cac tgg 912		
Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His Val Ile His Trp		
270	275	280
ctg cga cag gcc cct gga caa ggg ctt gag tgg atg gga tat att tat 960		
Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Tyr		
290	295	300
cct tac aat gat ggt act aag tat aat gag aag ttc aag gac aga gtc 1008		
Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys Asp Arg Val		
305	310	315
acg atg acc tca gac acg tcc atc agc aca gcc tac atg gag ttg agc 1056		
Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu Leu Ser		
320	325	330
agt ctc aga tct gac gac acg gcc gtc tat tat tgt gct aga ggg ggt 1104		
Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly		
335	340	345
tac tat act tac gac gac tgg ggc caa gca acc ctg gtc aca gtc tcg 1152		
Tyr Tyr Thr Tyr Asp Asp Trp Gly Gln Ala Thr Leu Val Thr Val Ser		
350	355	360
agt ggt ggc gga ggt tcc gat att gtg atg act cag tct cca ctc tcc 1200		
Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser		
370	375	380
ctg ccc gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt 1248		
Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser		
385	390	395
cag agc ctt gtg cac agt aat gga aag acc tat tta cat tgg tat ctg 1296		
Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu His Trp Tyr Leu		
400	405	410
cag aag cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac 1344		
Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn		
415	420	425
cga ttt tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act 1392		
Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr		

430	435	440	445
gat ttc aca ctg aaa atc agc agg gtg gag gct gat gat gtt gga att			1440
Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile			
450	455	460	
tat tac tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg			1488
Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly			
465	470	475	
acc aag ctg gag atc aaa taa tga gcg			1515
Thr Lys Leu Glu Ile Lys			
480			

<210> 79

<211> 1515

<212> DNA

<213> Mouse, Human

<400> 79

atg gga tgg agc tgc atc atc ctc ttc tgg gta gca aca gct aca ggt	48
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly	

gtc gac tcc cag gtc cag ctg gtc cag tct ggg gct gag gtc aag aag	96
Val Asp Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	

-1 1	5	10
cct ggg gcc tca gtc cag gtt tcc tgc aag gca tct gga tac acc ttc	144	
Pro Gly Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe		

15	20	25
acc aac cat gtt atg cac tgg ctg cga cag gcc cct gga caa ggg ctt	192	
Thr Asn His Val Met His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu		

30	35	40	45
gag tgg atg gga tat att tat cct tac aat gat ggt act aag tat aat	240		
Glu Trp Met Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn			

50	55	60
gag aag ttc aag ggc aga gtc acg atg acc tca gac acg tcc atc acg	288	
Glu Lys Phe Lys Gly Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser		

65	70	75
aca gcc tac atg gag tgg acg agt ctc aga tct gac gac acg gcc gtc	336	
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val		

80	85	90
tat tat tgt gct aga ggg ggt tac tat tct tac gac gac tgg ggc caa 384		
Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln		
95	100	105
gca acc ctg gtc aca gtc tcg agt ggt ggc gga ggt tcc gat att gtg 432		
Ala Thr Leu Val Thr Val Ser Ser Gly Gly Ser Asp Ile Val		
110	115	120
atg act cag tct cca ctc tcc ctg ccc gtc acc cct gga gag ccg gcc 480		
Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala		
130	135	140
tcc atc tcc tgc aga tca agt cag agc ctg ctg cac agt aag gga aac 528		
Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser Lys Gly Asn		
145	150	155
acc tat tta cag tgg tat ctg cag aag cca ggc cag tct cca aga ctc 576		
Thr Tyr Leu Gln Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu		
160	165	170
ctg atc tac aaa gtt tcc aac cga ttt tct ggt gtc cca gac aga ttc 624		
Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe		
175	180	185
agc ggc agt ggg tca ggc act gat ttc aca ctg aaa atc agc agg gtg 672		
Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val		
190	195	200
gag gct gat gat gtt gga att tat tac tgc tct caa agt aca cat gtt 720		
Glu Ala Asp Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val		
210	215	220
ccg tac acg ttt ggc cag ggg acc aag ctg gag atc aaa ggt ggt ggt 768		
Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly		
225	230	235
ggc tgc ggt ggt ggt gga tcc ggt ggt ggc gga tgc cag gtg cag ctg 816		
Gly Ser Gly Gly Ser Gly Gly Ser Gln Val Gln Leu		
240	245	250
gtg cag tct ggg gct gag gtg aag aag cct ggg gcc tca gtg cag gtt 864		
Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Gln Val		
255	260	265
tcc tgt aag gca tct gga tac acc ttc acc aac cat gtt atg cac tgg 912		
Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His Val Met His Trp		

270	275	280	285
ctg cga cag gcc cct gga caa ggg ctt gag tgg atg gga tat att tat			960
Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Tyr Ile Tyr			
290	295	300	
cct tac aat gat ggt act aag tat aat gag aag ttc aag ggc aga gtc			1008
Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe Lys Gly Arg Val			
305	310	315	
acg atg acc tca gac acg tcc atc agc aca gcc tac atg gag ttg agc			1056
Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu Leu Ser			
320	325	330	
agt ctc aga tct gac gac acg gcc gtc tat tat tgt gct aga ggg ggt			1104
Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly			
335	340	345	
tac tat tct tac gac gac tgg ggc caa gca acc ctg gtc aca gtc tcg			1152
Tyr Tyr Ser Tyr Asp Asp Trp Gly Gln Ala Thr Leu Val Thr Val Ser			
350	355	360	365
agt ggt ggc gga ggt tcc gat att gtg atg act cag tct cca ctc tcc			1200
Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser			
370	375	380	
ctg ccc gtc acc cct gga gag ccg gcc tcc atc tcc tgc aga tca agt			1248
Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser			
385	390	395	
cag agc ctt ctg cac agt aag gga aac acc tat tta cag tgg tat ctg			1296
Gln Ser Leu Leu His Ser Lys Gly Asn Thr Tyr Leu Gln Trp Tyr Leu			
400	405	410	
cag aag cca ggc cag tct cca aga ctc ctg atc tac aaa gtt tcc aac			1344
Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr Lys Val Ser Asn			
415	420	425	430
cga ttt tct ggt gtc cca gac aga ttc agc ggc agt ggg tca ggc act			1392
Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Thr			
435	440	445	
gat ttc aca ctg aaa atc agc agg gtg gag gct gat gat gtt gga att			1440
Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp Asp Val Gly Ile			
450	455	460	
tat tac tgc tct caa agt aca cat gtt ccg tac acg ttt ggc cag ggg			1488
Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr Phe Gly Gln Gly			

465

470

475

acc aag ctg gag atc aaa taa tga gcg 1515

Thr Lys Leu Glu Ile Lys

480

&lt;210&gt; 80

&lt;211&gt; 39

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;400&gt; 80

ctcgaggaat tcccaccatg ggaatggagct gatcatcc 39

&lt;210&gt; 81

&lt;211&gt; 27

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;400&gt; 81

gggggcctgt cgcagccagt gaataac 27

&lt;210&gt; 82

&lt;211&gt; 45

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;400&gt; 82

gggcagtcag tgcatacggc cggtcgatca gatcgagac tgcac 45

&lt;210&gt; 83

&lt;211&gt; 35

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;400&gt; 83

gggcaatgcc ttagaggat gggatataat tattcc 35

}

<210> 84

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<400> 84

tcattatitg atctcaagct tggccccca gccaaacgtg tacggaacat gigt 54

<210> 85

<211> 68

<212> DNA

<213> Artificial Sequence

<220>

<400> 85

tactatitg ctagaggggg ttactatact tacgacgact ggggcigcgc aaccctggtc 60

acagtc 68

<210> 86

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<400> 86

gggcitcigc agataccat gtaaataggc ctitc 35

<210> 87

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<400> 87

gggcagigcc caagacccct gatctacaaa gtttcc

<210> 88

<211> 37

<212> DNA

### 〈213〉 Artificial Sequence

220

<400> 88

tcattatgg atctcaagct tggccccctg gccaaac

〈210〉 89

211 <211> 708

<212> DNA

213

<400> 89

<210> 90

<211> 234

<212> PRT

213

<400> 90

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

1                    5                    10                    15

Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His

20 25 30

Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met

35 40 45

Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe  
 50 55 60  
 Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Gly Gly Tyr Tyr Thr Asp Asp Trp Gly Gln Ala Thr Leu  
 100 105 110  
 Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln  
 115 120 125  
 Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser  
 130 135 140  
 Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu  
 145 150 155 160  
 His Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Arg Leu Leu Ile Tyr  
 165 170 175  
 Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 180 185 190  
 Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp  
 195 200 205  
 Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr  
 210 215 220  
 Phe Gly Cys Gly Thr Lys Leu Glu Ile Lys  
 225 230

<210> 91

<211> 708

<212> DNA

213

<400> 91

```

caggcgacg tggcagtc tggggctgag gtgaagaagc cggggccic agtgcaggtt 60
tccgtaaagg catcggaaia caccctacc aaccatgtia ttcactggct ggcacaggcc 120
ccctggcaag ggcttggatg gaatggatat attatccctt acaaataatgg tataatgtat 180
aatgagaatg tcaaggacag agtcacgtat acctcagaca cgttcatcg cacagcciac 240
atggatgttg gcagtcacatc atcgtacgtac acggccgtat actatgtgtc tagaggggt 300
tataatcatc acgacgacttg gggctgcgca accctggatc cagtcacgtat tggggcgaa 360

```

<210> 92

234

<212> PRT

213

<400> 92

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Val Lys Lys Pro Gly Ala  
 5 10 15  
 Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn His  
 20 25 30  
 Val Ile His Trp Leu Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Tyr Ile Tyr Pro Tyr Asn Asp Gly Thr Lys Tyr Asn Glu Lys Phe  
 50 55 60  
 Lys Asp Arg Val Thr Met Thr Ser Asp Thr Ser Ile Ser Thr Ala Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Gly Gly Tyr Tyr Thr Asp Asp Trp Gly Cys Ala Thr Leu  
 100 105 110  
 Val Thr Val Ser Ser Gly Gly Gly Ser Asp Ile Val Met Thr Gln  
 115 120 125  
 Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser  
 130 135 140  
 Cys Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Lys Thr Tyr Leu  
 145 150 155 160  
 His Trp Tyr Leu Gln Lys Pro Gly Gln Cys Pro Arg Leu Leu Ile Tyr  
 165 170 175  
 Lys Val Ser Asn Arg Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 180 185 190

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Asp  
195 200 205  
Asp Val Gly Ile Tyr Tyr Cys Ser Gln Ser Thr His Val Pro Tyr Thr  
210 215 220  
Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
225 230